

# IN Motion

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## Bone Health

Bones play many roles in the body. They provide structure, protect organs, anchor muscles, and store calcium. Adequate calcium consumption and weight bearing physical activity build strong bones, optimizes bone mass, and may reduce the risk of osteoporosis later in life.

### Peak Bone Mass

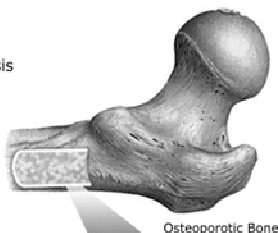
Peak bone mass refers to the genetic potential for bone density. By the age of 20, the average woman has acquired most of her skeletal mass. A large decline in bone mass occurs in older adults, increasing the risk of osteoporosis. For women this occurs around the time of menopause.

It is important for young girls to reach their peak bone mass in order to maintain bone health throughout life. A person with high bone mass as a young adult will be more likely to have a higher bone mass later in life. Inadequate calcium consumption and physical activity early on could result in a failure to achieve peak bone mass in adulthood.

### Osteoporosis

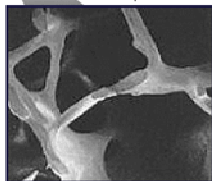
Osteoporosis or "porous bone" is a disease of the skeletal system characterized by low bone mass and deterioration of bone tissue. Osteoporosis leads to an increase risk of bone fractures typically in the wrist, hip, and spine.

Section of bone showing osteoporosis



Normal Bone

Osteoporotic Bone



Reproduced from J Bone Miner Res. 1988; 1:16-21 with permission of the American Society for Bone and Mineral Research

"I can feel the wind go by when I run. It feels good. It feels fast." *Evelyn Ashford, Olympic Champion Sprinter*

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### Calcium and Vitamin D

Calcium is a mineral needed by the body for healthy bones, teeth, and proper function of the heart, muscles, and nerves. The body cannot produce calcium; therefore, it must be absorbed through food. Good sources of calcium include Vitamin D also plays an important role in healthy bone development. Vitamin D helps in the absorption of calcium (this is why milk is fortified with vitamin D).

Source: [www.cdc.gov](http://www.cdc.gov)

#### Children

- 4 to 8 need at least 800 mg/day.
- 9 to 18 need at least 1,300 mg/day.

#### Adults

- 19 to 50 need at least 1,000 mg/day.

#### Adults older

- 50+ need at least 1,200 mg/day

**Important note:** Most kids are not meeting their calcium needs. Less than half of adolescent boys and only one-fifth of adolescent girls eat the recommended servings of dairy foods. Calcium cannot build bones alone. It works with other nutrients to increase bone strength. These include: Vitamin D, Vitamin K, Potassium, Fluoride, Magnesium

Source: [www.eatright.org](http://www.eatright.org)

## Facts

**Bone Health and Osteoporosis: A Surgeon General's Report.**

**By 2020, one in two Americans aged 50 years or older will be at risk for fractures from osteoporosis or low bone mass.**

Source: [www.cdc.gov](http://www.cdc.gov)

**Age 11-15 is a time when fast-growing bones need calcium.**

Source: <http://www.nichd.nih.gov/milk/milk.cfm>

## Weight-Bearing Physical Activity

Regular physical activity has been associated with many positive health benefits including strong bones. Like proper calcium consumption, adequate weight-bearing physical activity early in life is important in reaching peak bone mass. Weight-bearing physical activities cause muscles and bones to work against gravity. Some examples of weight bearing physical activities include

Walking, Jogging, or running  
Tennis or Racquetball  
Field Hockey  
Stair climbing  
Jumping rope  
Basketball  
Dancing  
Hiking  
Soccer  
Weight lifting

Incorporating weight-bearing physical activity into an exercise plan is a great way to keep bones healthy and meet physical activity recommendations set forth in the Dietary Guidelines for Americans.

**Adults:** Engage in at least 30 minutes of moderate physical activity (on) most, preferably all, days of the week. However, the American Medical Association recommends adults get 60 minutes daily.

**Children:** Engage in at least 60 minutes of moderate physical activity (on) most, preferably all, days of the week

SOURCE:  
<http://www.cdc.gov/nutrition/everyone/basics/vitamins/calcium.html>

## Activity ...

## Consider this:

## Nutrition ...

Try substituting frozen yogurt for your traditional ice cream treat. It will provide the same amount of calcium to help build bones with much less fat. Most cold treat restaurants like TCBY, Zesto's, etc... will make the substitution if you request it. Some offer a variety of frozen yogurt flavors. It's for your health, so simply ask!

### Good sources of calcium and Vitamin D include:

Dairy products—low fat or nonfat milk, cheese, and yogurt. Dark green leafy vegetables—bok choy and broccoli. Calcium fortified foods—orange juice, cereal, bread, soy beverages, and tofu products. Nuts—almonds. (Source: [www.cdc.gov](http://www.cdc.gov)) **Vitamin D** is found in many dietary sources such as fish, eggs, fortified milk, and cod liver oil. The sun also contributes significantly to the daily production of vitamin D, and as little as 10 minutes of exposure is thought to be enough to prevent deficiencies. The term "vitamin D" refers to several different forms of this vitamin. Two forms are important in humans: ergocalciferol (vitamin D2) and cholecalciferol (vitamin D3). Vitamin D2 is synthesized by plants. Vitamin D3 is synthesized by humans in the skin when it is exposed to ultraviolet-B (UVB) rays from sunlight. Foods may be fortified with vitamin D2 or D3. (Source: [www.mayoclinic.com](http://www.mayoclinic.com))

### Exercise

W	A	L	K	L	E	K	G	O	J	H
S	R	U	N	N	E	F	E	U	I	K
G	W	N	X	U	V	C	P	K	R	D
B	J	I	P	T	A	M	E	E	R	G
Q	M	I	M	R	U	U	T	I	S	Y
B	S	I	S	J	F	A	N	R	S	M
I	A	P	L	W	W	K	I	Y	K	L
Y	P	L	R	C	E	A	R	K	I	W
O	A	O	L	I	T	A	V	R	Q	W
S	F	L	D	S	N	E	T	P	A	W
W	U	F	P	R	W	T	R	L	O	U

BALL	JOB	SPRINT
CLIMB	JUMP	STAIRS
DRINK	PLAY	SWEAT
GYM	RACE	SWIM
HIKE	RUN	WALK
IPOD	SKI	WATER

## News ...

